



Cadastral Technical Working Group

Idaho GeoSpatial Committee

Committee Report – February 7, 2002

Presentation Outline:

- *Cadastral Data defined*
- *BLM's Geographic Coordinate Database (GCDB)*
- *Cadastral TWG activity*
- *Idaho Cadastral Plan*
- *Review of STC "GIS Integration" Program proposal for consistency with the Cadastral Framework Data Implementation Plan*

Cadastral Data defined:

Cadastral data are defined as the geographic extent of the past, current, and future rights and interests in real property, including the spatial information necessary to describe that geographic extent.

Rights and interests are the benefits or enjoyment in real property that can be conveyed, transferred, or otherwise allocated to another for economic remuneration.

Rights and interests are recorded in land record documents (however, internal agency documents may not be recorded with County Recorders).

Representing Cadastral Data

The spatial information necessary to describe rights and interests includes surveys and legal description frameworks:

- the Public Land Survey System,*
- parcel-by-parcel surveys and descriptions.*

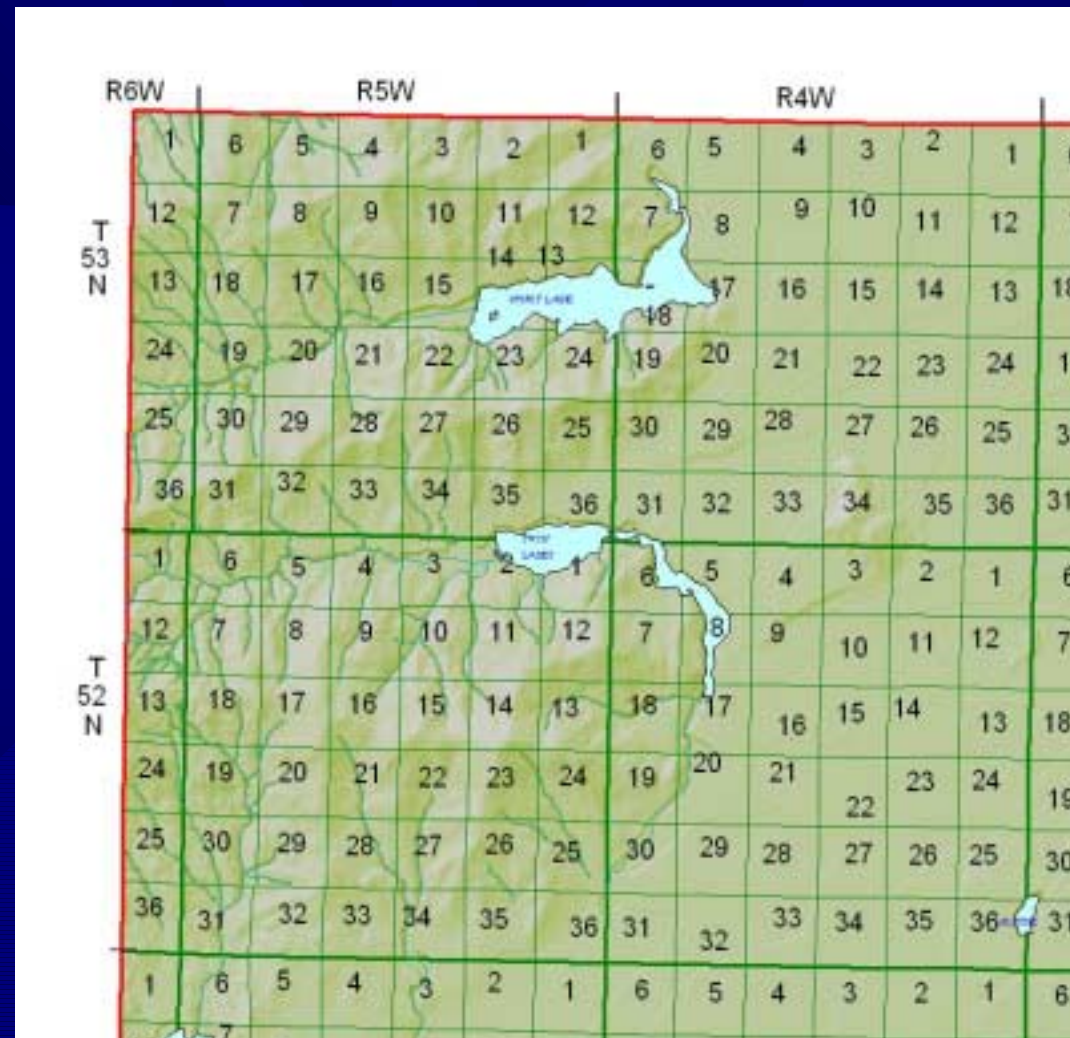
The Public Land Survey System (PLSS)

A rectangular survey system that typically divides the land into 6-mile square townships, which are further subdivided into 1-mile square sections.

The PLSS is the primary survey and legal description system for defining the boundaries of the parcels of public lands, and forms the basis of patents issued when public lands pass out of Federal ownership.

Public Land Survey System (PLSS)

Section-Township-Range



Parcel Descriptions

The legal descriptions for most of the western United States originate from the PLSS.

Because the PLSS is the basis for all public and private land entitlement in the West, it is a critical component of the cadastral (land ownership) layer.

The PLSS provides the spatial reference system for land ownership and title information.

Parcel Data



The GCDB

Bureau of Land Management's
Geographic Coordinate Database

The GCDB is a *dynamic* data model of the Public Land Survey System (PLSS).

The PLSS/GCDB is designed to meet the needs of BLM and other Federal agencies, and to provide *the foundation on which state and local governments can build their own parcel-based Land Information Systems.*

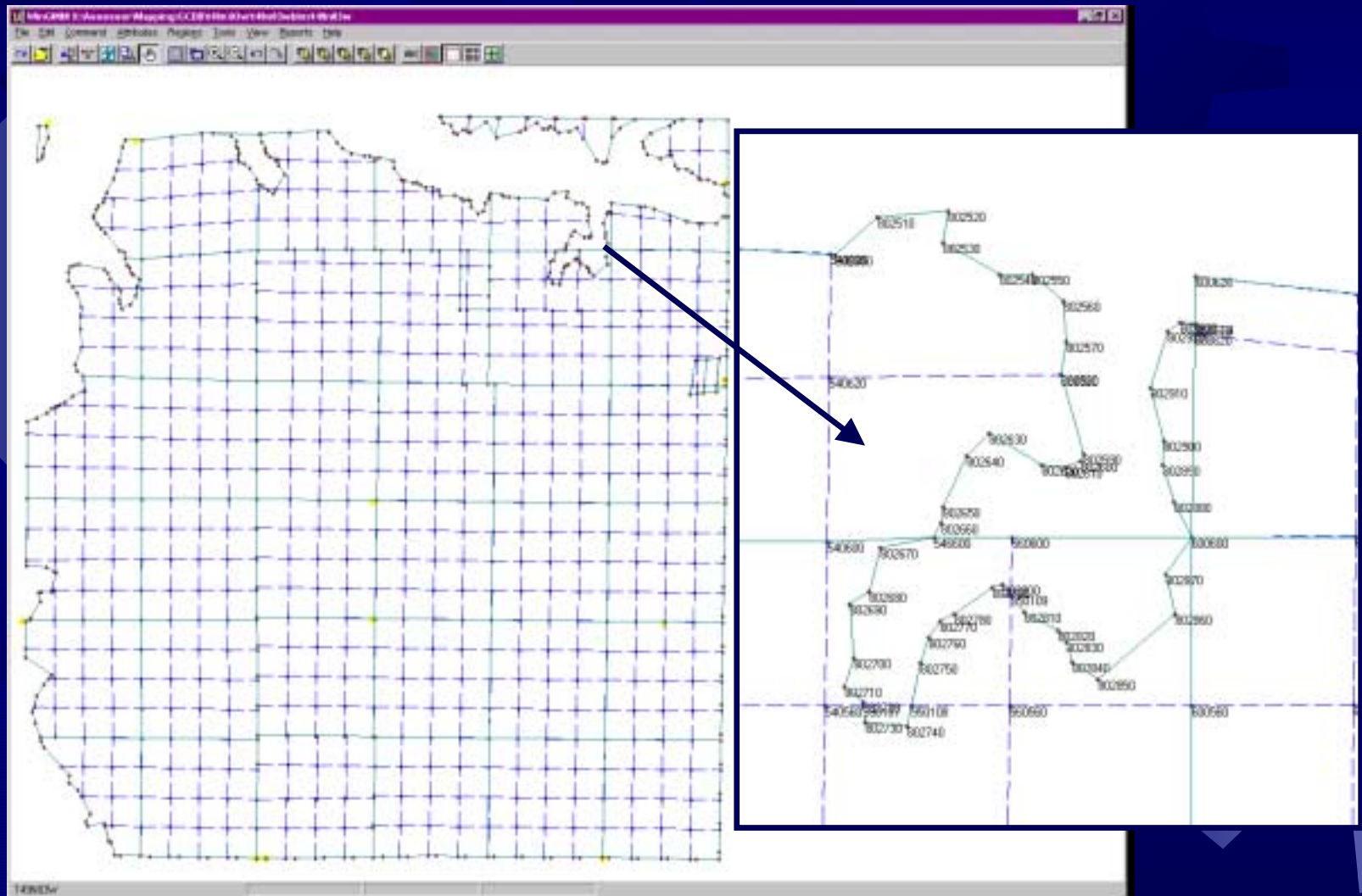
(from BLM publication)

The GCDB was designed to incorporate updated coordinate information (survey and control data), to increase needed levels of accuracy.

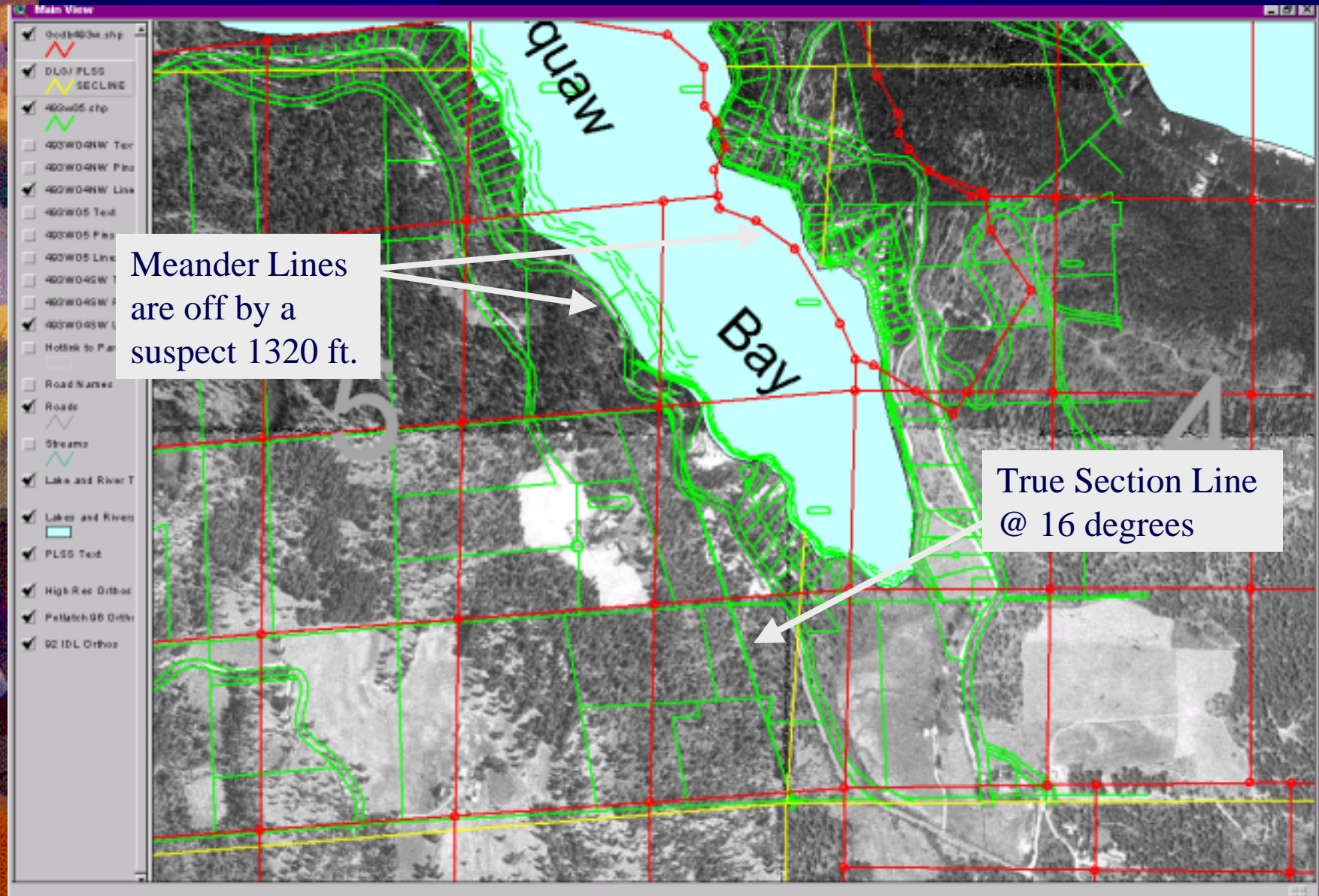
In its current stage of development (for most of Idaho), it includes original survey information from the General Land Office (GLO, circa 1900), USGS survey control points, with some additional updated survey and control information.

The current “calculation” of the GCDB may not reflect the accuracy needed for various purposes.

A long range vision and plan is needed to maximize the investment in improving the GCDB, and for using this data as “the foundation” for LIS and GIS at the State and Local levels.



GCDB Accuracy Issues





Cadastral Technical Working Group

Background and Activity

History:

Established 1999

(Counties, CDA Tribe, IDWR, IDL, ITD, STC, BLM, BOR, private companies)

- 1) to coordinate the upgrade of the GCDB
- 2) to integrate GCDB with cadastral data statewide

March 2000

Committee attended Cadastral Forum sponsored by the Western Governor's Association (WGA) in Salt Lake City

Cadastral Technical Working Group

June 2000

Adopted NILS as model for an Idaho Integrated Land System.

November 2000

BLM published guidelines for developing state cadastral plans.

December 2000

Committee began development of a state cadastral plan based on BLM guidelines.

February 2001

completed draft Cadastral Plan, adopted by ITRMC and submitted to BLM.

April 2001

draft Plan presented at Intermountain GIS Conf.



Cadastral Technical Working Group

September 2001

Reviewed status of projects and programs underway, discussed STC proposed program for GIS integration, and I-Team concepts.

October 2001

Reviewed STC 5-Year Cadastral / GIS Program proposal, action to move ahead with Cadastral Plan goals that do not require additional funding (standards and model development), and to reformat the Plan into Utah I-Team format.

December 2001

Presented TWG background, progress, and planned activity for 2002.

Cadastral Technical Working Group

February 2002

Reviewed first draft of reformatted Plan, identified items for clarification, correction and update.

Voted to recognize the proposed STC GIS Integration Program as consistent with, and supportive and contributive to, the Idaho Cadastral Plan.

In recognition of agency mission and statutory duties, and in recognition of the vote of confidence by the Idaho Assessor's Association of February 4, 2002, voted to identify the Idaho State Tax Commission as the lead agency for coordinating statewide parcel map development pursuant to provisions of the Idaho Cadastral Plan.

In recognition of agency mission and statutory duties, voted to formally identify the Idaho Department of Lands as the lead agency for coordinating GCDB development pursuant to provisions of the Idaho Cadastral Plan.

Working Group direction for 2002:

Combined Cadastral/Geodetic TWG
mission statement, bylaws, membership representation guidelines

Cadastral and Geodetic sections of the Idaho Framework
Data Implementation Plan for review and adoption by the IGC.

Pursue pilot program funding through the NSDI State
Advisor Program.

Geodetic & Survey Control subcommittee to work with the Idaho
Surveyors Association - website and database for GPS corner
control data for upgrading GCDB.

Joint Assessors Association/TWG Parcel Mapping subcommittee to
work with the STC for developing compliant FGDC/NILS mapping
standards, and parcel model.

Idaho Cadastral Plan



I. Inventory and
evaluation of
existing data sets

V. Collection
and Integration
of Parcel Data

Idaho Cadastral Database / Web site

II. Collection of
PLSS/GCDB data

IV. Integration of
PLSS/GCDB
Sources

III. Improvement
of PLSS/GCDB
data

Idaho Cadastral Database / Web site

(compiled statewide GCDB database - inquiry / input / output)

Data - Edge-matched GCDB for State of Idaho

Data - GCDB linked to inventory, contacts, stakeholders, and input data via web forms

Web Map - thematic display of available data

Web input form - Survey Information Source

Web input form -GCDB measured line info (bearing and distance)

Web input form -GCDB corner info (CPF, GPS, Plat / Survey reference)

Web input form -Parcel data (upload for internal, or external hyperlink)

Web inquiry - point-click-identify by subject (contacts, status, specific requests for data/project consortium development, actual survey data, hyperlinks, etc.)

Web download - survey and corner data for GCDB calculation and parcel mapping purposes

Web download - GCDB, parcel maps, govt. boundaries, other cadastral data and/or through data hyperlinks.

I. Inventory and evaluation of existing data sets

- State Manager/Vendor develops initial database of: stakeholders \ contacts \ inventory
- State invites participation
- Stakeholders \ contacts \ public upload data to Cadastral Database
- Cadastral Data (warehouse\clearinghouse) available for download
- Additional data added upon completion of projects and detailed area plans

II. Collection of PLSS/GCDB data

- BLM prepares GCDB for areas where it doesn't currently exist, including other available survey info from Cadastral Database

III. Improvement of PLSS/GCDB data

- BLM completes any additional processing needed for bringing existing PLSS/GCDB up to current standards.

IV. Integration of PLSS/GCDB Sources

- Develop local Township database (upload data to Cadastral Database)
- Re-calculate GCDB
- Identify Areas for Verification and/or Improvement
- Additional Data Collection

V. Collection and Integration of Parcel Data

- Develop Section Level parcel maps from survey data
- Adjust Section parcel map to re-calculated GCDB
- Analyze fit of adjustment to identify areas of GCDB that may need improvement
- Develop cartographic control to achieve desired parcel description integrity within Township and/or Regional level parcel map
- Develop parcel polygon coverage with FGDC / State compliant attributes
- Re-adjust as necessary as part of parcel map maintenance procedures

Idaho Cadastral Plan – Executive Summary

Goal:

To develop an ongoing self-sustaining program, to establish and develop key program components that will be integrated into the operation and maintenance functions of stakeholder organizations, to support cadastral based business processes in both the public and private sectors.

Approach:

- 1) Define standards and business rules for cadastral data functions,
- 2) Inventory, catalog and evaluate existing data,
- 3) Develop a statewide “standardized” cadastral database warehouse for facilitating cadastral data collection and update, compilation and dissemination,
- 4) Develop a systematic program for prioritized collection and processing of data on a funded project basis, as well as on an ongoing basis as part of internal agency maintenance activities.

Review of State Tax Commission

GIS Integration Plan

☀Mission:

To use spatial data in the Tax Commission in a graphic, GIS format. This will allow graphic analysis to enhance planning and service to customers. It will streamline operations and promote efficient use of resources. It will offer better access to legislators when conducting economic research in Idaho.

Components of Plan that are consistent, supportive and contributive to the Idaho Cadastral Plan:

- support the improvement of the statewide geodetic control through funding survey of key section corners.
- assist counties in mapping parcel level private lands (supplying standards development, training and support)
- linking parcel maps with limited, non-confidential data
- developing and supporting automated COGO tools (software programs) for counties to use in processing updates to the parcel data.
- Both the section corner database and the parcel maps will be made available to the counties and other state agencies by intranet or internet.

Cadastral TWG Recommendation

The Cadastral TWG recommends that the IGC forward to ITRMC a positive recommendation for support of the proposed Tax Commission GIS Integration Plan, for those components of the plan that pertain to the Idaho Cadastral Plan.

Our review of the proposed STC Plan indicated that the Plan is consistent, supportive and contributive to the Idaho Cadastral Plan, as verified by vote of the Cadastral TWG on February 5, 2002.